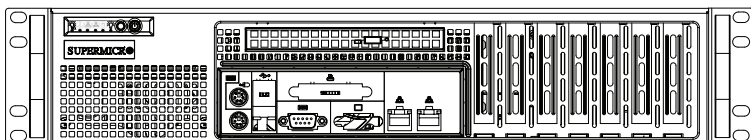# SUPER○®

SC523 Chassis Series

SC523L-520B
SC523L-410B

USER'S MANUAL

1.0a

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Manual Revision 1.0a
Release Date: August 9, 2011

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Preface

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SC523 2U chassis. Installation and maintenance should be performed by experienced technicians only.

Supermicro's SC523 chassis features easy-access front I/O ports and a depth of only 14.5" for space-limited applications. The chassis design optimizes every aspect of interior space without compromising superior cooling. It is also equipped with a 520 Watt, high-efficiency power supply for superb power savings.

This document lists the compatible parts available when this document was published. Always refer to the our Web site for updates on supported parts and configurations.

Manual Organization

Chapter 1 Introduction

The first chapter provides a description of the main components included with this chassis and describes the primary features of the SC523 chassis. This chapter also includes contact information.

Chapter 2 System Safety

This chapter lists warnings, precautions, and system safety. You should thoroughly familiarize yourself with this chapter for a general overview of the safety precautions that should be followed before installing and servicing this chassis.

Chapter 3 Chassis Components

Refer here for details on this chassis model including the fans, bays, airflow shields, and other components.

Chapter 4 System Interface

Refer to this chapter for details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 5 Chassis Setup and Maintenance

Follow the procedures given in this chapter when setting up or maintaining your chassis.

Chapter 6 Rack Installation

Refer to this chapter for detailed information on chassis rack installation. You should follow the procedures given in this chapter when installing, removing or reconfiguring your chassis into a rack environment.

Appendices

This section lists compatible cable and power supply specificationsRefer to our Web site for the latest information.

Appendix A: Chassis Cables

Appendix B: Power Supply Specifications

Table of Contents

Notes

Chapter 1

Introduction

1-1   Overview

Supermicro's SC523 2U chassis features a unique and highly-optimized design. The chassis is equipped with high-efficiency power supply. High-performance fans provide ample optimized cooling. Two fixed 3.5" drives offer maximum storage capacity in a 2U short-depth form factor.

1-2   Shipping List

Part Numbers

Please visit the following link for the latest shipping lists and part numbers for your particular chassis model: http://www.supermicro.com/products/chassis/2U/?chs=523

SC523L-410B Chassis				
Model	**CPU**	**HDD**	**I/O Slots**	**Power Supply**
SC523L-410B	Intel/AMD Single or Dual Processor Support	2 x 3.5" Fixed Hard Drive Support	7 x LP	410W

SC523L-520B Chassis				
Model	**CPU**	**HDD**	**I/O Slots**	**Power Supply**
SC523L-520B	Intel/AMD Single or Dual Processor Support	2 x 3.5" Fixed Hard Drive Support	7 x LP	520W

1-3   Contacting Supermicro

Headquarters

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	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information)
	support@supermicro.com (Technical Support)
Web Site:	www.supermicro.com

Europe

Address:	Super Micro Computer B.V.
	Het Sterrenbeeld 28, 5215 ML
	's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	sales@supermicro.nl (General Information)
	support@supermicro.nl (Technical Support)
	rma@supermicro.nl (Customer Support)

Asia-Pacific

Address:	Super Micro Computer, Inc.
	4F, No. 232-1, Liancheng Rd.
	Chung-Ho 235, Taipei County
	Taiwan, R.O.C.
Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3991
Web Site:	www.supermicro.com.tw
Technical Support:	
Email:	support@supermicro.com.tw
Tel:	+886-(2) 8226-5990

Chapter 2

System Safety

2-1   Overview

This chapter provides a quick setup to get your chassis up and running. Following the steps in the order given should enable you to have your chassis set up and operational within a minimal amount of time. This quick setup guide assumes that you are an experienced technician, famailiar with common concepts and terminology.

2-2   Warnings and Precautions

You should inspect the box the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage, file a damage claim with carrier who delivered your system.

Decide on a suitable location for the rack unit that will hold that chassis. It should be situated in a clean, dust-free area that is well venilated. Avoid areas where heat, electrical noise and eletromagnetic fields are generated.

You will also need it placed near at least two grounded power outlets to take advantage of redundant power features.

2-3   Preparing for Setup

The SC523 Chassis includes a set of rail assemblies, including mounting brackets and mounting screws you will need to install the systems into the rack. Please read this manual in its entirety before you begin the installation procedure.

2-4   Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the SC523 from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.

- Do not work alone when working with high voltage components.

- Power should always be disconnected from the system when removing or installing main system components, such as the serverboard, memory modules and the DVD-ROM and floppy drives (not necessary for hot-swappable drives). When disconnecting power, you should first power-down the system with the operating system and then unplug the power cords from all the power supply modules in the system.

- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power, if necessary.

- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.

- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.

- The power supply power cord must include a grounding plug and must be plugged into grounded electrical outlets.

- CAUTION - Serverboard battery: There is a danger of explosion if the on-board battery is installed upside down, which will reverse its polarities This battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- CAUTION - DVD-ROM Laser: This server may have come equipped with a DVD-ROM drive. To prevent direct exposure to the laser beam and hazardous radiation exposure, do not open the enclosure or use the unit in any unconventional way.

2-5   General Safety Precautions

- Keep the area around the chassis clean and free of clutter.

- Place the chassis top cover and any system components that have been re-moved away from the system or on a table so that they won't accidentally be stepped on.

- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.

- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.

- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

2-6   System Safety

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.

- Use a grounded wrist strap designed to prevent static discharge.

- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.

- Touch a grounded metal object before removing any board from its antistatic bag.

- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.

- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.

- When handling chips or modules, avoid touching their pins.

- Put the serverboard and peripherals back into their antistatic bags when not in use.

- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the serverboard.

Chapter 3

Chassis Components

3-1   Overview

This chapter describes the most common components included with your chassis. Some components listed may not be included or compatible with your particular chassis model. For more information, see the installation instructions detailed later in this manual.

3-2   Components

Chassis

The chassis includes one slim DVD dummy cover, and two 3.5" fixed hard drives. For the latest shipping lists, visit our Web site at: http://www.supermicro.com.

Fans

The SC523 chassis accepts two system fans. System fans for the SC523 chassis are powered from the serverboard. These fans are 80 x 38 mm and are powered by 4-pin connectors.

Mounting Rails

The SC523 can be placed in a rack for secure storage and use. To set up your rack, follow the step-by-step instructions included in this manual.

Power Supply

Each SC523 chassis model includes a high-efficiency power supply rated at 410 or 520 Watts. In the unlikely event your power supply fails, replacement is simple and can be done without tools.

Air Shroud

Air shrouds are shields, usually plastic, which funnel air directly to where it is needed. Always use the air shroud included with your chassis.

3-3   Where to get Replacement Components

Though not frequently, you may need replacement parts for your system. To en-sure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors/ System Integrators/Resellers. A list of Supermicro Authorized Distributors/System Integrators/Reseller can be found at: http://www.supermicro.com. Click the Where to Buy link

Chapter 4

System Interface

4-1   Overview

This chasis includes LEDs on the control panel and drive carriers that indicate the activity and health of specific components.

4-2   Control Panel Buttons

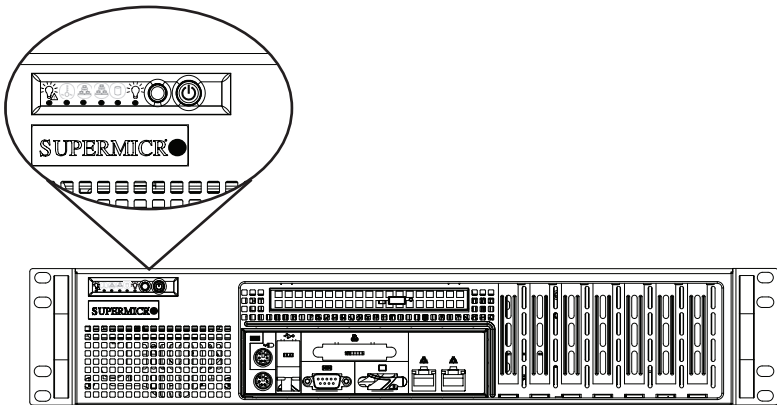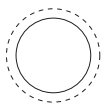There are two buttons located on the front of the chassis: a reset button and a power on/off button.

Figure 4-1: Front Panel Buttons

- **Reset:** The reset button is used to reboot the system.

4-3   Control Panel LEDs

The control panel located on the front of the SC523 chassis has five LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.

- **Power Failure:** When this LED flashes, it indicates a power failure in the power supply

- **Overheat/Fan Fail**
  When Flashing: This LED indicates a fan failure.
  When Continuously On (not flashing). This LED indicates an overheat condition caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. To correct this condition, do the following:

Check the Following

1. Check the routing of the cables and move any cables that restrict the airflow.

2. Confirm that all fans are operating normally.

3. Verify that the heatsinks are installed properly.

4. If the chassis cover is not aligned correctly, the airflow may be disrupted. This leads to overheating. Confirm that the chassis cover is placed correctly.

This LED will remain active as long as the overheat condition exists.

- **NIC2:** Indicates network activity on GLAN2 when flashing.

- **NIC1:** Indicates network activity on GLAN1 when flashing.

- **HDD:** Indicates IDE channel activity, SAS/SATA drive, and/or DVD-ROM drive activity when flashing.

- **Power:** The main power switch is used to activate or deactivate power to the server system. Turning off the system power with this button removes the main power, but standby power remains on. Therefore, you must unplug system before servicing.

Chapter 5

Chassis Setup and Maintenance

5-1   Overview

This chapter covers the steps required to install components and perform mainte-
nance on the chassis. The only tools needed to install components and perform
maintenance is a Phillips screwdriver and under certain circumstances, a hex
wrench. Print this page to use as a reference while setting up the chassis.

5-2   Installation Procedures

Removing the Chassis Cover.

Removing and Installing the Air Shroud

Removing and Installing Hard Drives.

Removing and Installing the DVD or CD-ROM

Installing the Motherboard (Includes I/O shield and expansion card slot setup).

Checking the Airflow in the System

General Maintenance

Systems Fans

Removing and Installing the Power Supply.

Review the warnings and precautions listed in the manual before
setting up or servicing this chassis. These include information in
Chapter 2: System Safety and the warning/precautions listed in the
setup instructions.
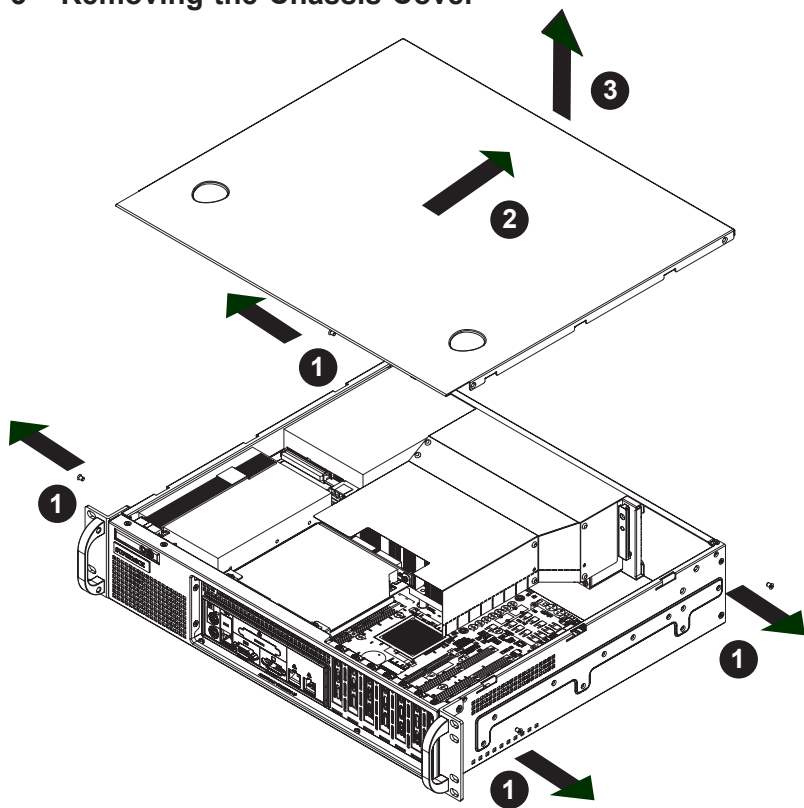
5-3   Removing the Chassis Cover

Figure 5-1: Removing the Chassis Cover

Removing the Chassis Cover

1. Remove the four screws holding the chassis cover in place.

2. Slide the cover toward the rear of the chassis

3. Lift the cover from the unit.

Warning: Except for short periods of time, do NOT operate the server without the cover in place. The chassis cover must be in place to allow proper airflow and prevent overheating.

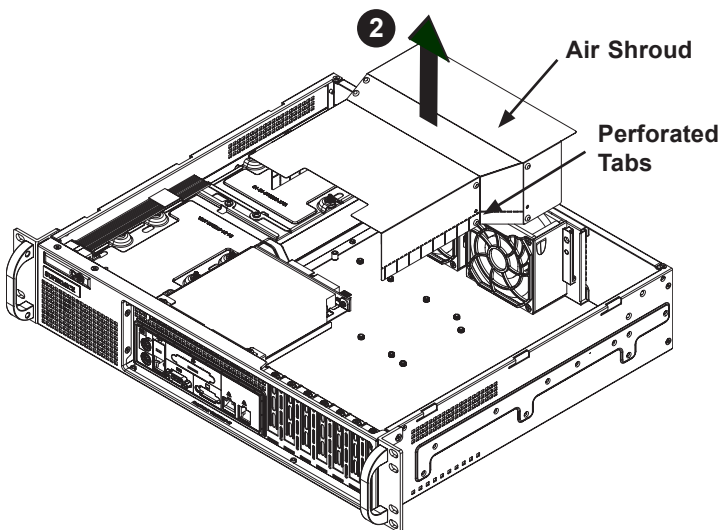## 5-4   Removing and Installing the Air Shroud

Figure 5-2: Removing the Air Shroud

Air shrouds concentrate airflow to maximize fan efficiency. The SC523 chassis air shroud does not require screws to set it up. The air shroud must be removed before a motherboard may be installed.

Removing the Air Shroud

1.   Unplug the chassis from any power source.

2.   Carefully lift the air shroud straight up and out of the chassis.

Installing the Air Shroud

1.   Each air shroud includes perforated tabs that can be removed to accommo-date motherboard components. To ensure maximum cooling, remove only the tabs that are necessary to ensure a proper fit of the air shroud.

2.   Place air shroud in the chassis. The air shroud covers the fans at the rear of the chassis.
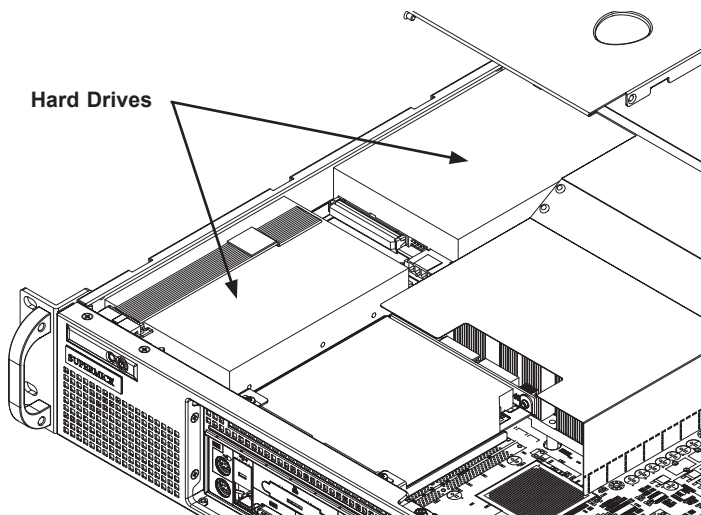
5-5   Removing and Installing Hard Drives

Hard Drives

Figure 5-3: Locating the Fixed Hard Drives within the Chassis

Removing the Hard Drives and Hard Drive Trays from the Chassis

1. Disconnect the chassis from any power source.

2. Disconnect the wiring to the hard drive.

3. Locate the hard drive that needs to be replaced within the chassis.

4. Remove the mounting screws holding the hard drive tray into the chassis, and set them aside for later use.
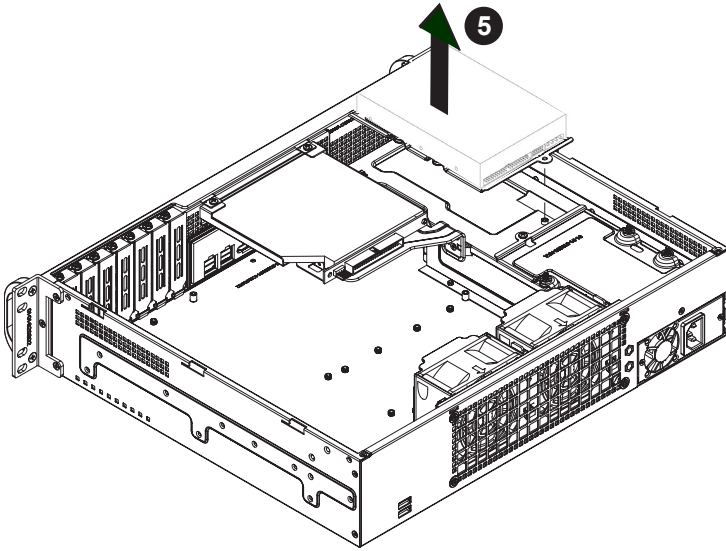
Figure 5-4: Removing the Hard Drive Tray from the Chassis

5. Carefully lift the hard drive tray and hard drive from the chassis.

6. Remove the mounting screws holding the hard drive into the hard drive tray and set them aside for later use.

 Warning: Except for short periods of time (while swapping hard drives), do not operate the server with the hard drives empty. The hard drive tray must have a hard drive or dummy drive installed.
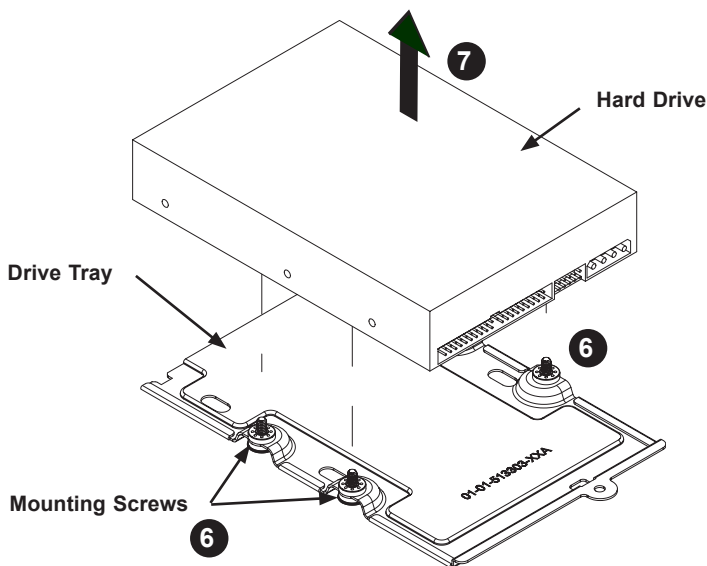
Figure 5-5: Removing the Hard Drive from the Drive Tray

7. Carefully remove the hard drive from the hard drive tray.

Installing a Hard Drive into the Hard Drive Tray

1. Install a new hard drive into the hard drive tray with the printed circuit board side facing down so that the mounting holes align with those in the carrier.

2. Using the screws which were set aside earlier, secure the hard drive into the hard drive tray by tightening all four screws.

3. Carefully lower the hard drive tray and hard drive into the chassis.

4. Secure the hard drive tray to the chassis using the screws set aside earlier.

5. Reconnect the wiring to the hard drive.

Warning: Only enterprise level hard drives are recommended for use in Supermicro chassis.

5-6   Removing and Installing the DVD or CD-ROM

Prior to installing the motherboard, the DVD or CD-ROM must be removed, then reinstalled after the motherboard has been installed in the chassis.
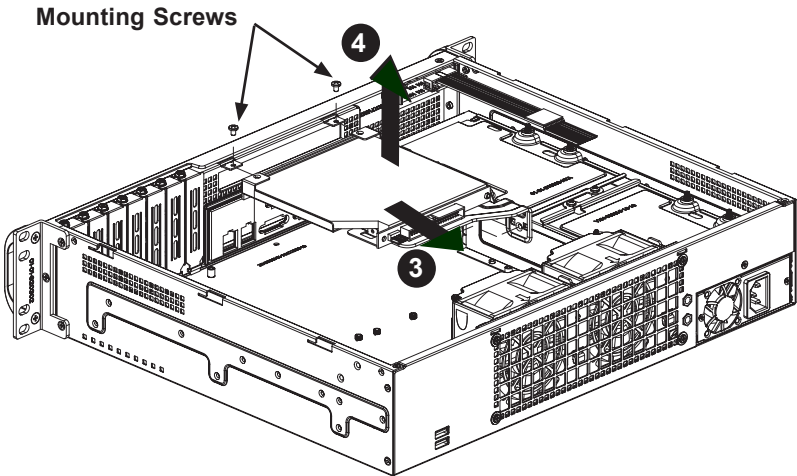

Figure 5-6: I/O Removing the DVD or CD-ROM

Removing the DVD or CD-ROM Drive

1. Locate and remove the screws holding the DVD-ROM in place, setting aside the screws for later use.

2. If necessary, disconnect any cables to the DVD-ROM and comport tray.

3. Slide the DVD-ROM and comport tray toward the rear of the chassis.

4. Lift the DVD-ROM and comport tray free from the chassis.

Installing the DVD or CD-ROM Drive

1. Carefully slide the DVD or CD-ROM and comport tray into the opening in the front of the chassis.

2. Secure the drive with the screws previously set aside and reattach the wiring.

5-7   Installing the Motherboard

This section describes how to install the motherboard to the chassis. To do this, you are required to remove the air shroud, hard drive, hard drive tray and DVD or CD-ROM drive prior to installing the motherboard. See the previous sections for instructions on how to remove these components.
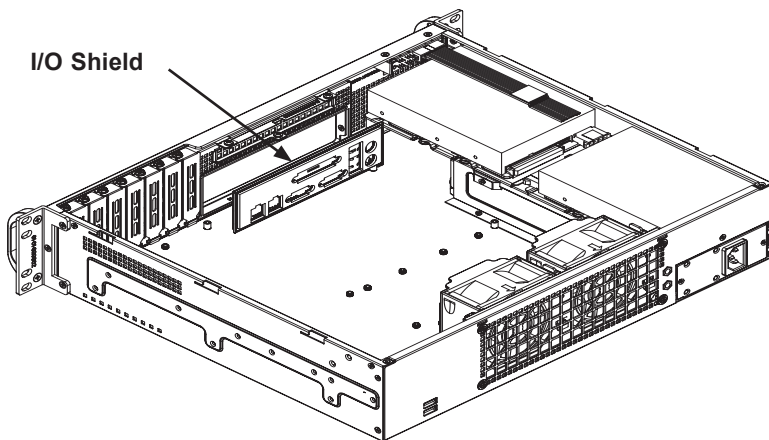

Figure 5-7: Installing the I/O Shield

Installing the I/O Shield

The I/O shield holds the motherboard ports in place. Install the I/O shield before installing the motherboard.

Installing the I/O Shield:

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, and precautions.

2. Make sure the I/O shield matches the motherboard ports. You may need to punch out the printer port.

3. With the illustrations facing the outside of the chassis, place the shield into the space provided.

4. Once installed, the motherboard will hold the I/O shield in place.

Permanent and Optional Standoffs

Standoffs prevent short circuits by securing space between the motherboard and the chassis surface. The SC523 chassis includes permanent standoffs in locations used by most motherboards.

Some motherboards require additional screws for certain CPUs, heatsinks, and other components. Optional standoffs are included for these motherboards. To use an optional standoff, screw the standoff into the chassis in the use the optional standoff in the same manner as the permanent standoffs.

M/B standoff
6-32 to 6-32

M/B (CPU) standoff
M5 to 6-32

Pan head
6-32 x 5 mm
[0.197]

Figure 5-8: Motherboard Standoffs and Motherboard Pan Head Screw

Motherboard Installation

Once the air shroud, hard disk drive tray, DVD or CD-ROM have been removed and any additional standoffs have been placed, the motherboard may be installed in the chassis.

Installing the Motherboard

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, precautions, and cable connections.

2. Disconnect the chassis from the power source and open the chassis cover.

3. As required by your motherboard, install standoffs in any areas that do not have a permanent standoff.

4. Lay the motherboard on the chassis aligning the permanent and optional standoffs. In addition, make sure the motherboard aligns with the I/O shield.
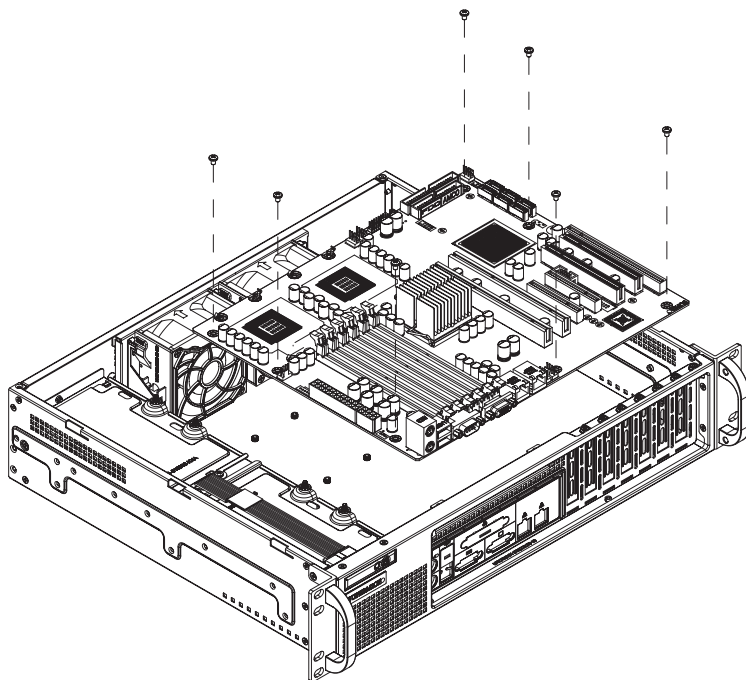
Figure 5-9: Installing the Motherboard

5. Secure the motherboard to the chassis using the rounded, Phillips head screws. Do not exceed eight pounds of torque when tightening down the motherboard.

6. Secure the CPU(s), heatsinks, and other components to the motherboard as described in the motherboard documentation.

7. Connect the cables between the motherboard, backplane, chassis, front panel, and power supply, as needed. Also, the fans may be temporarily removed to allow access to the backplane ports.
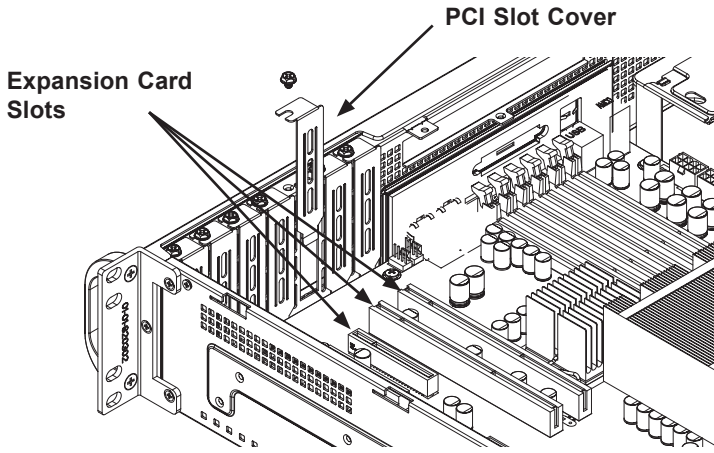
PCI Slot Setup

Figure 5-10: Remove the Expansion Card Slot Screw

SC523 chassis include seven PCI slots for expansion cards.

Installing Expansion Cards:

1. Confirm that each add on card you are installing includes a standard L-bracket.

2. Disconnect the power supply and lay the chassis on a flat surface. If you have not done so, open the chassis cover.

3. Remove the screw holding the slot cover in place for each low profile expansion card slot you want to use. Keep this screw for later use.
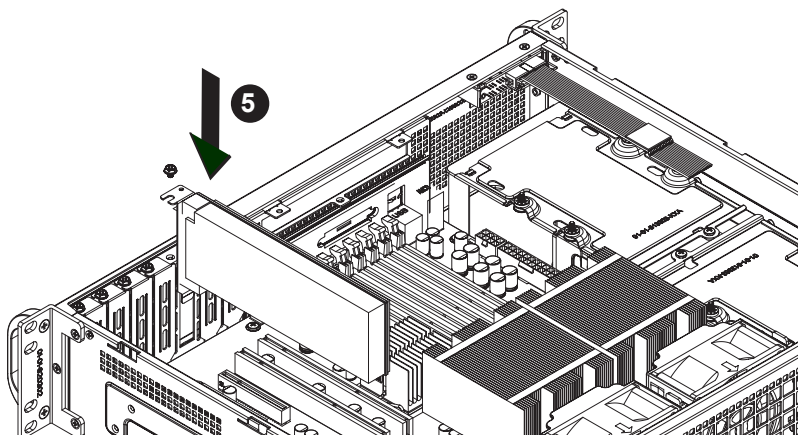
Figure 5-11: Securing the Expansion Card within the Chassis

4. Connect the expansion cards to the motherboard. Follow expansion card manufacturer's instructions.

5. Secure each expansion card to the chassis using the card's L-bracket and the screw previously removed.

5-8   Checking the Airflow in the System

Proper airflow allows the chassis to keep the server components cooled and prevent damage. Use the following steps to check the airflow after setting up the system or servicing.

Checking the Server's Air Flow

1. Make sure that no cables or foreign objects obstruct airflow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables. For the SC523 chassis, it is recommended that cables run beside the power supply as much as possible.

2. Make sure there are no objects to obstruct airflow in and out of the server.

3. Do not operate the server without hard drives or dummy drives in the hard drive trays.

4. Use recommended server parts only.

The control panel LEDs inform you of system status. See the System Interface section of this manual for details on the LEDs and the control panel buttons.

Once the air shroud has been properly installed, do the following:

1. Install the DVD-ROM drive unit and connect the DVD-ROM drive to the motherboard.

2. Install the hard drive tray.

3. Securely close the chassis cover.

Installation Complete

This completes the setup and configuration of the system. The system fans and power supply are pre-installed in the chassis. In the unlikely event that you need to replace the system fans or power supply, proceed to the following sections. If the chassis will be installed into a rack, proceed to the next chapter for rack installation instructions.

5-9   System Fans

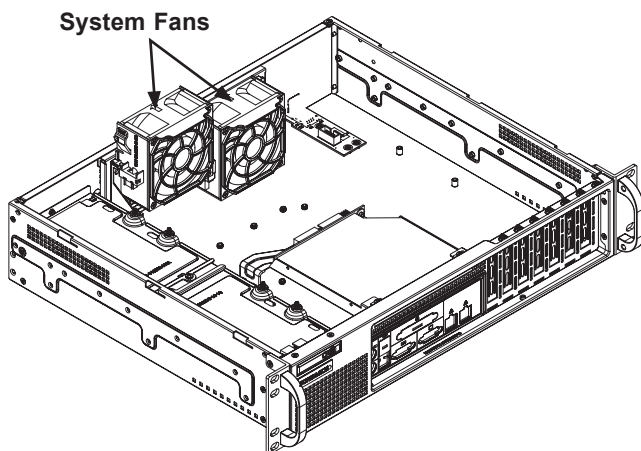The SC523 chassis includes two fans for cooling and air circulation.

System Fans

Figure 5-12: Placing the System Fans

Replacing a System Fan

1. Carefully remove the chassis cover while the system is running. The chassis cover should only remain off for brief periods of time while performaning system maintenance.

2. Determine which fan not operating properly.

3. Take note of the direction that the airflow indicator arrow on the top of the fan is pointing.

4. Press the release tabs on each side of the fan and carefully lift it up and out of the chassis.

5. Replace the fan with a new one of the same model, ensuring that the airflow indicator arrow is pointing in the same direction as the fan being replaced.

6. Close the cover and secure it to the chassis.

5-10 Removing and Instaling the Power Supply

The SC523 chassis has a 410 or 520 Watt power supply. This power supply is auto-switching capable. This enables it to automatically sense and operate at a 100v to 240v input voltage. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Power Supply Replacement

The SC523 chassis models includes one power supply. Replacement units can be ordered directly from Supermicro (see contact information in the Preface).

Removing the Power Supply

1. Disconnect the chassis from the power source.

2. Disconnect the power connectors from the motherboard.

3. Remove the screws from the power supply panel on the back of the chassis as illustrated.
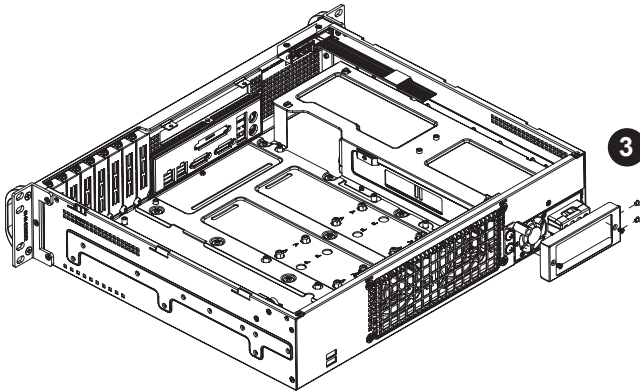

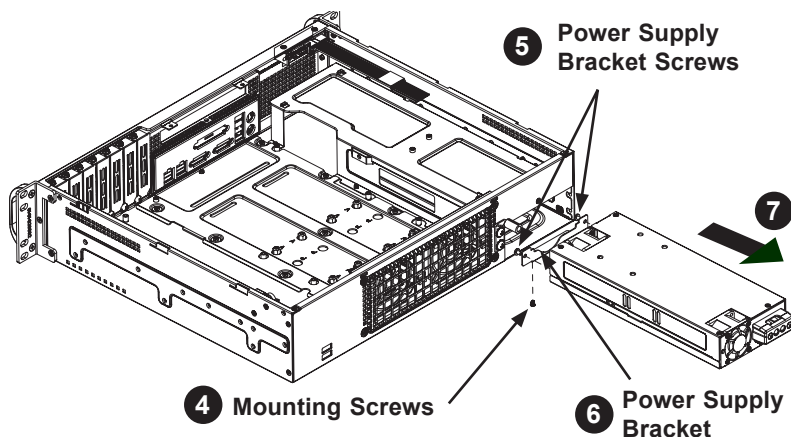**Figure 5-13: Removing the Power Supply Panel**

Figure 5-14: Removing the Power Supply

4. Remove the mounting screws holding the power supply to the floor of the chassis and set them aside for later use.

5. Remove the screws holding the power supply bracket to the rear of the power supply and set them aside for later use.

6. Remove the power supply bracket.

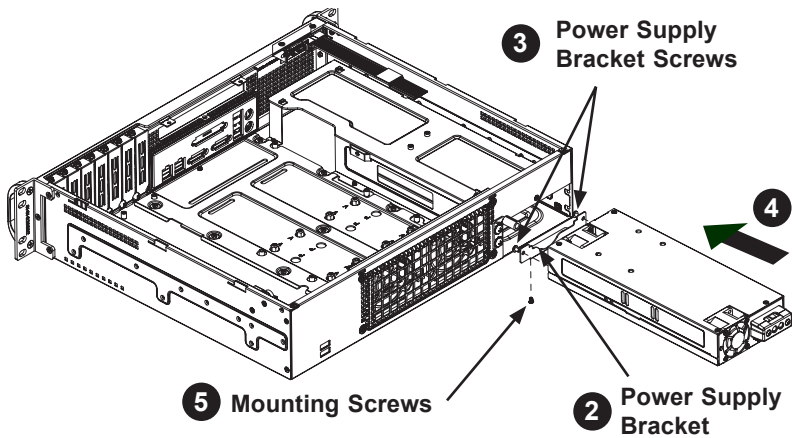7. Gently pull the power supply out of the chassis.

Figure 5-15: Removing the Power Supply

Installing the Power Supply

1. Disconnect the chassis and replacement power supply from any power source.

2. Place the power supply bracket on the rear of the power supply

3. Use the power supply bracket screws previously set aside to attache the power supply bracket to the rear of the power supply.

4. Gently push the new power supply module into the power bay until it clicks into the locked position.

5. Insert the mounting screws up through the bottom of the chassis and into the power supply.

6. Plug the AC power cord into the module and power-up the system.

Notes

Chapter 6

Rack Installation

6-1   Overview

This chapter provides instructions for mounting the SC523 chassis onto a rack.

6-2   Unpacking the System

You should inspect the box the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage, you should file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold your chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. You will also need it placed near a grounded power outlet. Be sure to read the Rack and Server Precautions in the next section.

6-3   Preparing for Setup

The box your chassis was shipped in should include two sets of rail assemblies, two rail mounting brackets and the mounting screws you will need to install the system into the rack. Please read this section in its entirety before you begin the installation procedure outlined in the sections that follow.

Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).

- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

- This product is for installation only in a Restricted Access Location (dedicated equipment rooms, service closets and the like).

 Warnings and Precautions

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.

- In single rack installation, stabilizers should be attached to the rack.

- In multiple rack installations, the racks should be coupled together.

- Always make sure the rack is stable before extending a component from the rack.

- You should extend only one component at a time - extending two or more simultaneously may cause the rack to become unstable.

General Server Precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.

- Determine the placement of each component in the rack *before* you install the rails.

- Install the heaviest server components on the bottom of the rack first, and then work up.

- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.

- Allow the hot-swappable hard drives and power supply modules to cool before touching them.

- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.

Rack Mounting Considerations

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).

Reduced Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (for example, the use of power strips and other devices.).

6-4   Rack Mounting Instructions

This section provides information on installing the SC523 chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

NOTE: The rails will fit a rack between 29" and 35.25" deep.

Identifying the Sections of the Rails

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of two sections: an inner fixed chassis rail that secures directly to the server chassis and an outer rack rail that secures directly to the rack itself.

Rail Brackets

The chassis package includes four rail brackets and two chassis mounts. The rail brackets have long ovals used to adjust the length of the rails when mounting. The chassis mounts (both short) have one square hole.
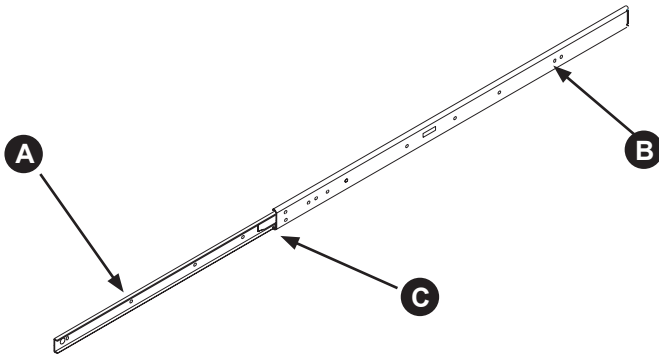
Figure 6-1: Inner and Outer Rails

Separating the Inner and Outer Rails

1. Pull the inner rail (A) from the outer rail (B) as far as possible.

2. Depress the locking tab (C) to pull the inner rail completely out and separate it from the outer rail.

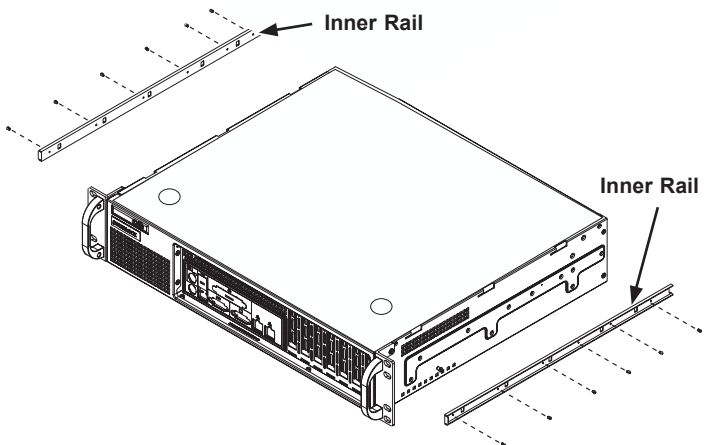3. Repeat steps 1 and 2 for the other rail.

Inner Rail

Inner Rail

Figure 6-2: Rail Installation

Installing the Inner Rail

1. Align the inner rail with the side of the chassis.

2. Secure the inner rail to the chassis using six M5 flat head screws.

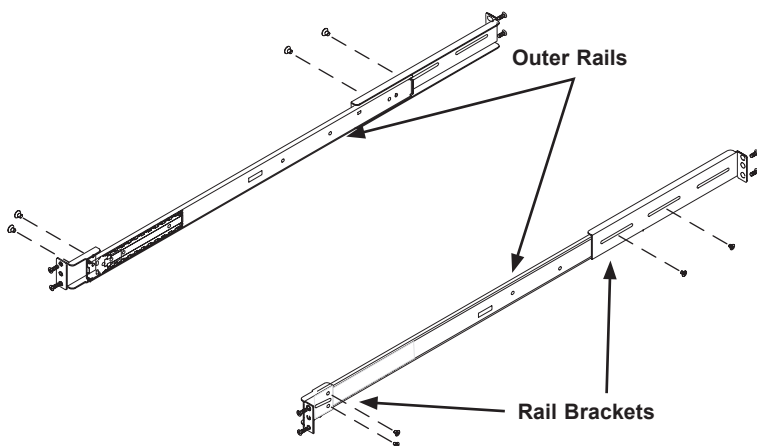3. Repeat steps 1 and 2 for the remaining inner rail.

Figure 6-3. Rack Brackets

Installing the Outer Rails to the Rack

1. Confirm that the inner rails have been separated from the outer rails.

2. Locate the rail brackets in the accessories box. The chassis package includes four rail brackets and two chassis mounts. The rail brackets have long ovals used to adjust the position of the rails when mounting. The chassis mounts (both short) have one square hole.

3. Secure the short brackets to the front of the outer rails with two M4 screws.

4. Secure the long brackets to the outer rails using two M4 screws. Tighten the screws loosely so the bracket can slide back and forth.

5. Position the outer rail and brackets in the rack at the desired level.

6. Secure the front of the rail to the rack using two M5 rack screws.

7. Slide the rear bracket so that it snugly fits into the rack. Secure the rear bracket to the rack using two M5 screws.

8. Tighten the screws that secure the rear bracket to the rail.

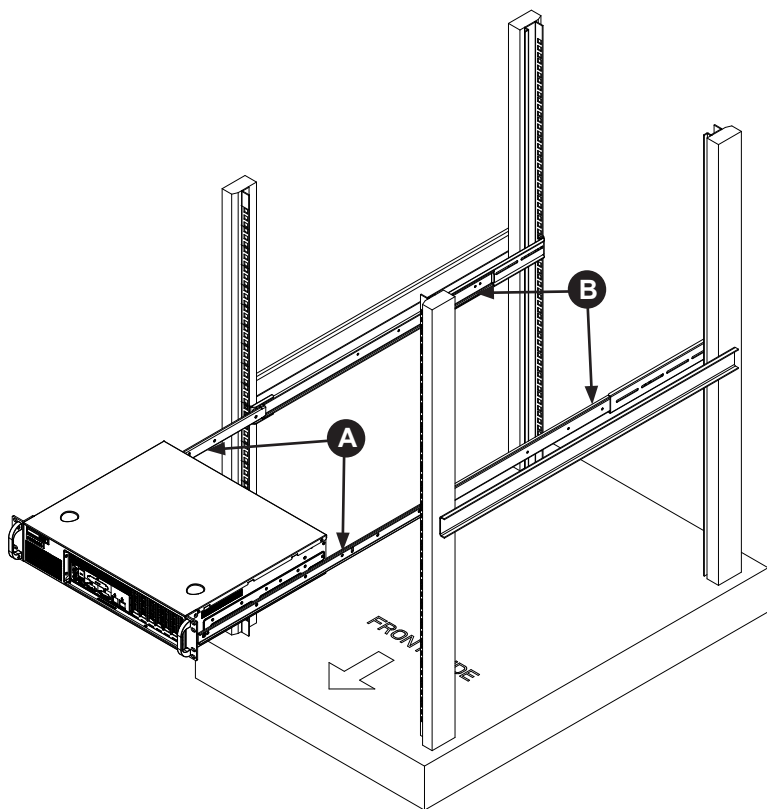9. Repeat these steps with the other chassis rail.

Figure 6-4: Inserting the Inner Rails into the Outer Rails

Installing the Chassis into a Rack

Chassis Installation

1. Confirm that the the inner rails (A) are attached to the chassis and that the outer rails (B) are installed on the rack

2. Align the inner rails with the front of the outer rails. Slide the inner rails into the outer rails, keeping the pressure even on both sides (you may have to depress the locking tabs when inserting).
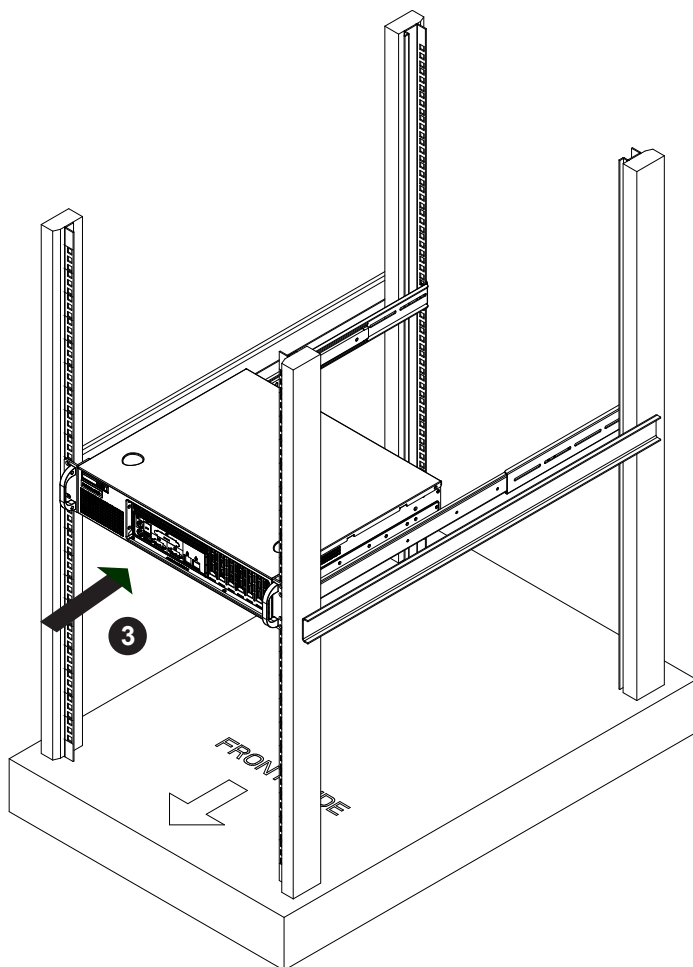
Figure 6-5: Mounting the Chassis onto the Rack

3. When the server has been pushed completely into the rack, you should hear the locking tabs "click" into the locked position.

4. (Optional) Insert and tightening the thumbscrews that hold the front of the server to the rack.
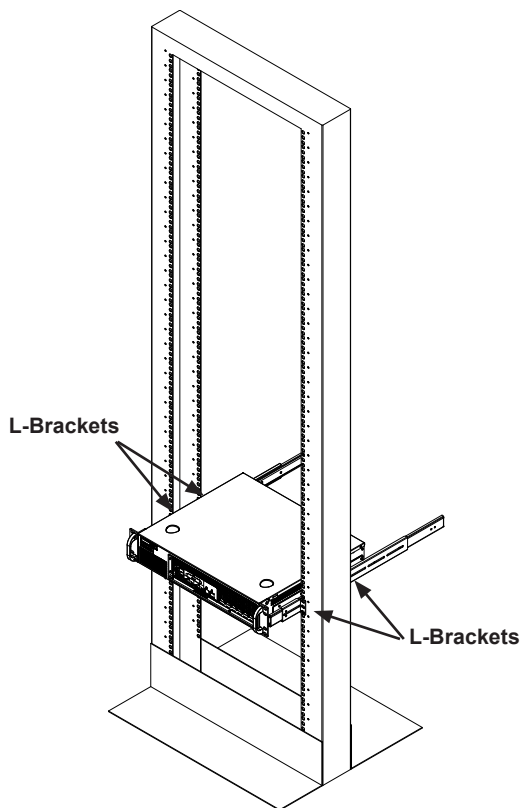
Figure 6-6: Mounting the Chassis onto an Open (Telco) Rack

Installing the Server into a Telco Rack

Installing the chassis into a Telco type rack

1. Use two L-brackets on either side of the chassis (four total). Determine how far the server will extend out the front of the rack. Larger chassis should be positioned to balance the weight between the front and back of the rack. If a bezel is included on your chassis, remove it.

2. Attach the two front brackets to each side of the chassis, and then add the two rear brackets, positioning them with just enough space to accommodate the width of the rack.

3. Complete the installation by sliding the chassis into the rack and tightening the brackets.

Appendix A

SC523 Chassis Cables

A-1   Overview

A variety of cables are supported for your chassis system. In order to obtain the most up-to-date information on compatible cables, compoments and configurations, refer to the manufacturer of the motherboard you are using and to our Web site at: www.supermicro.com.

SC523L-410B			
Part #	**Type**	**Length**	**Description**
CBL-0140L	Cable	23.6" (60 cm)	IDE 80-wire cable for DVD-ROM
CBL-0071L	Cable	30" (76 cm)	Round 16-pin to 16-pin front panel ribbon cable

SC523L-520B			
Part #	**Type**	**Length**	**Description**
CBL-0140L	Cable	23.6" (60 cm)	IDE 80-wire cable for DVD-ROM
CBL-0071L	Cable	30" (76 cm)	Round 16-pin to 16-pin front panel ribbon cable

A-3   Compatible Cables

These cables are compatible with the SC523 Chassis.

Alternate SAS/SATA Cables

Some compatible motherboards have different connectors. If your motherboard has only one SAS connector that the SAS/SATA cables must share, use one of the following cables. These cables must be purchased separately.

Cable Name: SAS Cable   **Quantity:** 1
Part #: CBL-0175L
Alt. Name: "Big Four"

   Description: This cable has one SFF-8484 (32-pin) connector on one end and four SAS connectors (seven pins each) at the other. This cable connects from the host (motherboard or other controller) to the backplane SAS hard drive port.

Cable Name: SAS Cable   **Quantity:** 1
Part #: CBL-0116
Alt. Name: iPass or "Small Four"

   Description: This cable has one ipass (SFF-8087/Mini-SAS) connector (36-pin) at one end and four SAS connectors on the other end. This cable connects from the host (motherboard or other controller) to the backplane SAS hard drive port.

Extending Power Cables

Although Supermicro chassis are designed with to be efficient and cost-effective, some compatible motherboards have power connectors located in different areas.

To use these motherboards it may be necessary to extend the power cables to the mother boards. To do this, use the following chart as a guide.

Power Cable Extenders		
Number of Pins	Cable Part #	Length
24-pin	CBL-0042	7.9" (20 cm)
20-pin	CBL-0059	7.9" (20 cm)
8-pin	CBL-0062	7.9" (20 cm)
4-pin	CBL-0060	7.9" (20 cm)

Front Panel to the Motherboard

The SC523 chassis includes a cable to connect the chassis front panel to the motherboard. If your motherboard uses a different connector, use the following list to find a compatible cable.

Front Panel to Motherboard Cable (Ribbon Cable)		
Number of Pins (Front Panel)	Number of Pins (Motherboard	Cable Part #
16-pin	16-pin	CBL-0049
16-pin	20-pin	CBL-0048
20-pin	20-pin	CBL-0047
16-pin	varies*	CBL-0068
20-pin	varies*	CBL-0067

* Split cables: Use these cable if your motherboard requires several different connections from the front panel.

A-5   Chassis Screws

The accessory box includes all the screws needed to set up your chassis. This section include descriptions of the most common screws used. Your chassis may not require all the parts listed.

M/B

Pan head
6-32 x 5 mm
[0.197]

HARD DRIVE

Flat head
6-32 x 5 mm
[0.197]

DVD-ROM CD-ROM FLOPPY DRIVE

Pan head
6-32 x 5 mm
[0.197]

Flat head
6-32 x 5 mm
[0.197]

Round head
3 x 5 mm
[0.197]

Round head
2.6 x 5 mm
[0.197]

RAIL

Flat head
M4 x 4 mm
[0.157]

Round head
M4 x 4 mm
[0.157]

Flat head
M5 x 12 mm[0.472]

Washer for M5

M/B STANDOFFS

M/B standoff
6-32 to 6-32

M/B (CPU) standoff
M5 to 6-32

Thumb screw
6-32 x 5 mm [0.197]

Appendix B

SC523 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

SC523L-410B	
	410W (Redundant)
MFR Part #	PWS-0061
Rated DC Voltage	Voltage Range: -36 to -72V Nominal Voltage: -.48V Max Input Current: 18A @ -48V 9.5 - 4.5 Amp
DC Output	5V + 3.3V ≤ 160W
+5	35.0 Amp
+5V standby	3.0 Amp
+12V	32.0 Amp
-12V	0.5 Amp
+3.3V	20.0 Amp

SC523L-520B	
	520W (Redundant)
MFR Part #	PWS-521-1H
AC Voltage	100 to 240V 50-60 Hz 7-3 Amp
+5	20 Amp
+5V standby	3 Amp
+12V	39 Amp
-12V	0.5 Amp
+3.3V	16 Amp